
Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2010; month=12; day=28; hr=9; min=22; sec=10; ms=550;]

Validated By CRFValidator v 1.0.3

Application No: 10567386 Version No: 2.0

Input Set:

Output Set:

Started: 2010-12-14 13:21:43.821 **Finished:** 2010-12-14 13:21:48.574

Elapsed: 0 hr(s) 0 min(s) 4 sec(s) 753 ms

Total Warnings: 4

Total Errors: 0

No. of SeqIDs Defined: 152

Actual SeqID Count: 152

Error code		Error Description										
W	213	Artificial or Unknown found in <213> in SEQ ID (149)										
W	213	Artificial or Unknown found in <213> in SEQ ID (150)										
W	213	Artificial or Unknown found in <213> in SEQ ID (151)										
W	213	Artificial or Unknown found in <213> in SEO ID (152)										

SEQUENCE LISTING

```
<110> BERNTENIS, NIKOLAOS
     BUURMAN, GERRIT
     KROPSHOFER, HARALD
     MUELLER, BERND
     SPINDELDREHER, SEBASTIAN
     VOGT, ANNE
     ZOLG, WERNER
<120> RA ANTIGENIC PEPTIDES
<130> 21796
<140> 10567386
<141> 2010-12-14
<150> PCT/EP2004/008609
<151> 2004-07-30
<150> EP 03017551.7
<151> 2003-08-07
<160> 152
<170> PatentIn version 3.5
<210> 1
<211> 14
<212> PRT
<213> Homo sapiens
<400> 1
Gly Asp Arg Gly Met Gln Leu Met His Ala Asn Ala Gln Arg
    5
                        10
<210> 2
<211> 17
<212> PRT
<213> Homo sapiens
<400> 2
Gly Asp Arg Gly Met Gln Leu Met His Ala Asn Ala Gln Arg Thr Asp
    5
                   10
Ala
<210> 3
<211> 16
<212> PRT
```

<213> Homo sapiens

```
<400> 3
Gly Asp Arg Gly Met Gln Leu Met His Ala Asn Ala Gln Arg Thr Asp
                              10
<210> 4
<211> 16
<212> PRT
<213> Homo sapiens
<400> 4
Ile Asn Asn Gln Leu Thr Leu Asp Ser Asn Thr Lys Tyr Phe His Lys
   5
                 10
<210> 5
<211> 17
<212> PRT
<213> Homo sapiens
<400> 5
Ile Asn Asn Gln Leu Thr Leu Asp Ser Asn Thr Lys Tyr Phe His Lys
1 5
                  10
Leu
<210> 6
<211> 19
<212> PRT
<213> Homo sapiens
<400> 6
Met Pro Lys Asn Val Val Phe Val Ile Asp Lys Ser Gly Ser Met Ser
             5
                               10
Gly Arg Lys
<210> 7
<211> 18
<212> PRT
<213> Homo sapiens
<400> 7
Met Pro Lys Asn Val Val Phe Val Ile Asp Lys Ser Gly Ser Met Ser
                10 15
```

Gly Arg

```
<210> 8
<211> 17
<212> PRT
<213> Homo sapiens
<400> 8
Met Pro Lys Asn Val Val Phe Val Ile Asp Lys Ser Gly Ser Met Ser
       5
                                   10
Gly
<210> 9
<211> 14
<212> PRT
<213> Homo sapiens
<400> 9
Asn Val Val Phe Val Ile Asp Lys Ser Gly Ser Met Ser Gly
                5
                                   10
<210> 10
<211> 15
<212> PRT
<213> Homo sapiens
<400> 10
Lys Asn Val Val Phe Val Ile Asp Lys Ser Gly Ser Met Ser Gly
                                   10
                5
                                                        15
<210> 11
<211> 15
<212> PRT
<213> Homo sapiens
<400> 11
Asn Val Val Phe Val Ile Asp Lys Ser Gly Ser Met Ser Gly Arg
                5
                                    10
                                                       15
<210> 12
<211> 16
<212> PRT
<213> Homo sapiens
<400> 12
Asn Val Val Phe Val Ile Asp Lys Ser Gly Ser Met Ser Gly Arg Lys
                5
                                    10
<210> 13
<211> 15
```

<212> PRT

```
<213> Homo sapiens
<400> 13
Gly His Pro Gln Tyr Leu Leu Asp Ser Asn Ser Trp Ile Glu Glu
              5
                        10
<210> 14
<211> 16
<212> PRT
<213> Homo sapiens
<400> 14
Gly His Pro Gln Tyr Leu Leu Asp Ser Asn Ser Trp Ile Glu Glu Met
                          10
<210> 15
<211> 14
<212> PRT
<213> Homo sapiens
<400> 15
Gly His Pro Gln Tyr Leu Leu Asp Ser Asn Ser Trp Ile Glu
<210> 16
<211> 18
<212> PRT
<213> Homo sapiens
<400> 16
Gly His Pro Gln Tyr Leu Leu Asp Ser Asn Ser Trp Ile Glu Glu Met
                          10
Pro Ser
<210> 17
<211> 13
<212> PRT
<213> Homo sapiens
<400> 17
His Pro Gln Tyr Leu Leu Asp Ser Asn Ser Trp Ile Glu
              5
                           10
<210> 18
<211> 12
<212> PRT
<213> Homo sapiens
```

<400> 18

```
Gly His Pro Gln Tyr Leu Leu Asp Ser Asn Ser Trp
1 5
                10
<210> 19
<211> 19
<212> PRT
<213> Homo sapiens
<400> 19
Gly Val Asp Arg Tyr Ile Ser Lys Tyr Glu Leu Asp Lys Ala Phe Ser
    5
                10
Asp Arg Asn
<210> 20
<211> 15
<212> PRT
<213> Homo sapiens
<400> 20
Arg Tyr Ile Ser Lys Tyr Glu Leu Asp Lys Ala Phe Ser Asp Arg
1 5
               10
<210> 21
<211> 14
<212> PRT
<213> Homo sapiens
<400> 21
Ile Ser Lys Tyr Glu Leu Asp Lys Ala Phe Ser Asp Arg Asn
1 5
<210> 22
<211> 15
<212> PRT
<213> Homo sapiens
<400> 22
Ile Ser Lys Tyr Glu Leu Asp Lys Ala Phe Ser Asp Arg Asn Thr
1 5
              10 15
<210> 23
<211> 13
<212> PRT
<213> Homo sapiens
<400> 23
Ile Ser Lys Tyr Glu Leu Asp Lys Ala Phe Ser Asp Arg
               10
1 5
```

```
<210> 24
<211> 16
<212> PRT
<213> Homo sapiens
<400> 24
Gly Ser Arg Glu Ile Lys Ser Gln Gln Ser Glu Val Thr Arg Ile Leu
                        10
<210> 25
<211> 12
<212> PRT
<213> Homo sapiens
<400> 25
Arg Glu Ile Lys Ser Gln Gln Ser Glu Val Thr Arg
    5
                       10
<210> 26
<211> 14
<212> PRT
<213> Homo sapiens
<400> 26
Gly Ser Arg Glu Ile Lys Ser Gln Gln Ser Glu Val Thr Arg
    5
                        10
<210> 27
<211> 14
<212> PRT
<213> Homo sapiens
<400> 27
Arg Glu Ile Lys Ser Gln Gln Ser Glu Val Thr Arg Ile Leu
    5
                     10
<210> 28
<211> 17
<212> PRT
<213> Homo sapiens
<400> 28
Gly Pro His Asp Val His Val Gln Ile Glu Thr Ser Pro Pro Ala Arg
1 5
               10 15
Asn
```

<210> 29 <211> 19

```
<213> Homo sapiens
<400> 29
Gly Pro His Asp Val His Val Gln Ile Glu Thr Ser Pro Pro Ala Arg
                                 10
Asn Leu Lys
<210> 30
<211> 16
<212> PRT
<213> Homo sapiens
<400> 30
Gly Pro His Asp Val His Val Gln Ile Glu Thr Ser Pro Pro Ala Arg
<210> 31
<211> 18
<212> PRT
<213> Homo sapiens
<400> 31
Thr Pro His Gly Ile Ile Leu Asp Ser Val Asp Ala Ala Phe Ile Cys
                       10
Pro Gly
<210> 32
<211> 17
<212> PRT
<213> Homo sapiens
<400> 32
Thr Pro His Gly Ile Ile Leu Asp Ser Val Asp Ala Ala Phe Ile Cys
              5
                            10
                                                 15
Pro
<210> 33
<211> 13
<212> PRT
<213> Homo sapiens
<400> 33
```

Thr Pro His Gly Ile Ile Leu Asp Ser Val Asp Ala Ala

<212> PRT

```
1 5 10
```

```
<210> 34
<211> 14
<212> PRT
<213> Homo sapiens
<400> 34
Gly Thr Pro His Gly Ile Ile Leu Asp Ser Val Asp Ala Ala
    5
                               10
<210> 35
<211> 15
<212> PRT
<213> Homo sapiens
<400> 35
Thr Pro His Gly Ile Ile Leu Asp Ser Val Asp Ala Ala Phe Ile
1 5
                      10
<210> 36
<211> 18
<212> PRT
<213> Homo sapiens
<400> 36
Ile Asp Lys Glu Gly Val Ile Glu Pro Asp Thr Asp Ala Pro Gln Glu
   5
                           10
Met Gly
<210> 37
<211> 15
<212> PRT
<213> Homo sapiens
<400> 37
Lys Glu Gly Val Ile Glu Pro Asp Thr Asp Ala Pro Gln Glu Met
                             10
    5
<210> 38
<211> 16
<212> PRT
<213> Homo sapiens
<400> 38
```

Ile Asp Lys Glu Gly Val Ile Glu Pro Asp Thr Asp Ala Pro Gln Glu

10

15

5

```
<210> 39
<211> 15
<212> PRT
<213> Homo sapiens
<400> 39
Asp Lys Glu Gly Val Ile Glu Pro Asp Thr Asp Ala Pro Gln Glu
1 5 10 15
<210> 40
<211> 261
<212> PRT
<213> Homo sapiens
<300>
<308> Swiss-Prot/P13284
<309> 1990-01-01
<313> (1)..(261)
<400> 40
Met Asp Ser Arg His Thr Phe Ala Pro Ala Ala Met Thr Leu Ser Pro
              10 15
Leu Leu Phe Leu Pro Pro Leu Leu Leu Leu Asp Val Pro Thr
                   25
        20
                                30
Ala Ala Val Gln Ala Ser Pro Leu Gln Ala Leu Asp Phe Phe Gly Asn
    35 40 45
Gly Pro Pro Val Asn Tyr Lys Thr Gly Asn Leu Tyr Leu Arg Gly Pro
50 55 60
Leu Lys Lys Ser Asn Ala Pro Leu Val Asn Val Thr Leu Tyr Tyr Glu
65 70 75 80
Ala Leu Cys Gly Gly Cys Arg Ala Phe Leu Ile Arg Glu Leu Phe Pro
      85 90 95
Thr Trp Leu Leu Val Met Glu Ile Leu Asn Val Thr Leu Val Pro Tyr
                 105
        100
                                   110
Gly Asn Ala Gln Glu Gln Asn Val Ser Gly Arg Trp Glu Phe Lys Cys
  115 120 125
Gln His Gly Glu Glu Cys Lys Phe Asn Lys Val Glu Ala Cys Val
            135 140
```

130

Leu Asp Glu Leu Asp Met Glu Leu Ala Phe Leu Thr Ile Val Cys Met 145 150 155 160 Glu Glu Phe Glu Asp Met Glu Arg Ser Leu Pro Leu Cys Leu Gln Leu 165 170 175 Tyr Ala Pro Gly Leu Ser Pro Asp Thr Ile Met Glu Cys Ala Met Gly 180 185 190 Asp Arg Gly Met Gln Leu Met His Ala Asn Ala Gln Arg Thr Asp Ala 200 205 Leu Gln Pro Pro His Glu Tyr Val Pro Trp Val Thr Val Asn Gly Lys 210 215 220 Pro Leu Glu Asp Gln Thr Gln Leu Leu Thr Leu Val Cys Gln Leu Tyr 230 235 240 225 Gln Gly Lys Lys Pro Asp Val Cys Pro Ser Ser Thr Ser Ser Leu Arg 245 250 255 Ser Val Cys Phe Lys 260 <210> 41 <211> 4563 <212> PRT <213> Homo sapiens <300> <308> Swiss-Prot/P04114 <309> 1986-11-01 <313> (1)..(4563) <400> 41 Met Asp Pro Pro Arg Pro Ala Leu Leu Ala Leu Leu Ala Leu Pro Ala 10 15 Leu Leu Leu Leu Leu Ala Gly Ala Arg Ala Glu Glu Met Leu 20 25 30 Glu Asn Val Ser Leu Val Cys Pro Lys Asp Ala Thr Arg Phe Lys His 40 45 35

Leu Arg Lys Tyr Thr Tyr Asn Tyr Glu Ala Glu Ser Ser Ser Gly Val50 $\,$ 55 $\,$ 60

Pro 65	Gly	Thr	Ala	Asp	Ser 70	Arg	Ser	Ala	Thr	Arg 75	Ile	Asn	Cys	Lys	Val 80
Glu	Leu	Glu	Val	Pro 85	Gln	Leu	Суз	Ser	Phe 90	Ile	Leu	Lys	Thr	Ser 95	Gln
Cys	Thr	Leu	Lys 100	Glu	Val	Tyr	Gly	Phe 105	Asn	Pro	Glu	Gly	Lys 110	Ala	Leu
Leu	Lys	Lys 115	Thr	Lys	Asn	Ser	Glu 120	Glu	Phe	Ala	Ala	Ala 125	Met	Ser	Arg
Tyr	Glu 130	Leu	Lys	Leu	Ala	Ile 135	Pro	Glu	Gly	Lys	Gln 140	Val	Phe	Leu	Tyr
Pro 145	Glu	Lys	Asp	Glu	Pro 150	Thr	Tyr	Ile	Leu	Asn 155	Ile	Lys	Arg	Gly	Ile 160
Ile	Ser	Ala	Leu	Leu 165	Val	Pro	Pro	Glu	Thr 170	Glu	Glu	Ala	Lys	Gln 175	Val
Leu	Phe	Leu	Asp 180	Thr	Val	Tyr	Gly	Asn 185	Cys	Ser	Thr	His	Phe 190	Thr	Val
Lys	Thr	Arg 195	Lys	Gly	Asn	Val	Ala 200	Thr	Glu	Ile	Ser	Thr 205	Glu	Arg	Asp
Leu	Gly 210	Gln	Cys	Asp	Arg	Phe 215	Lys	Pro	Ile	Arg	Thr 220	Gly	Ile	Ser	Pro
Leu 225	Ala	Leu	Ile	Lys	Gly 230	Met	Thr	Arg	Pro	Leu 235	Ser	Thr	Leu	Ile	Ser 240
Ser	Ser	Gln	Ser	Cys 245	Gln	Tyr	Thr	Leu	Asp 250	Ala	Lys	Arg	Lys	His 255	Val
Ala	Glu	Ala	Ile 260	Cys	Lys	Glu	Gln	His 265	Leu	Phe	Leu	Pro	Phe 270	Ser	Tyr
Asn	Asn	Lys 275	Tyr	Gly	Met	Val	Ala 280	Gln	Val	Thr	Gln	Thr 285	Leu	Lys	Leu

Glu	Asp 290	Thr	Pro	Lys	Ile	Asn 295	Ser	Arg	Phe	Phe	Gly 300	Glu	Gly	Thr	Lys
Lys 305	Met	Gly	Leu	Ala	Phe 310	Glu	Ser	Thr	Lys	Ser 315	Thr	Ser	Pro	Pro	Lys 320
Gln	Ala	Glu	Ala	Val 325	Leu	Lys	Thr	Leu	Gln 330	Glu	Leu	Lys	Lys	Leu 335	Thr
Ile	Ser	Glu	Gln 340	Asn	Ile	Gln	Arg	Ala 345	Asn	Leu	Phe	Asn	Lys 350	Leu	Val
Thr	Glu	Leu 355	Arg	Gly	Leu	Ser	Asp 360	Glu	Ala	Val	Thr	Ser 365	Leu	Leu	Pro
Gln	Leu 370	Ile	Glu	Val	Ser	Ser 375	Pro	Ile	Thr	Leu	Gln 380	Ala	Leu	Val	Gln
Суз 385	Gly	Gln	Pro	Gln	Cys 390	Ser	Thr	His	Ile	Leu 395	Gln	Trp	Leu	Lys	Arg 400
Val	His	Ala	Asn	Pro 405	Leu	Leu	Ile	Asp	Val 410	Val	Thr	Tyr	Leu	Val 415	Ala
Leu	Ile	Pro	Glu 420	Pro	Ser	Ala	Gln	Gln 425	Leu	Arg	Glu	Ile	Phe 430	Asn	Met
Ala	Arg	Asp 435	Gln	Arg	Ser	Arg	Ala 440	Thr	Leu	Tyr	Ala	Leu 445	Ser	His	Ala
Val	Asn 450	Asn	Tyr	His	Lys	Thr 455	Asn	Pro	Thr	Gly	Thr 460	Gln	Glu	Leu	Leu
Asp 465	Ile	Ala	Asn	Tyr	Leu 470	Met	Glu	Gln	Ile	Gln 475	Asp	Asp	Cys	Thr	Gly 480
Asp	Glu	Asp	Tyr	Thr 485	Tyr	Leu	Ile	Leu	Arg 490	Val	Ile	Gly	Asn	Met 495	Gly
Gln	Thr	Met	Glu 500	Gln	Leu	Thr	Pro	Glu 505	Leu	Lys	Ser	Ser	Ile 510	Leu	Lys

Суз	Val	Gln 515	Ser	Thr	Lys	Pro	Ser 520	Leu	Met	Ile	Gln	Lys 525	Ala	Ala	Ile
Gln	Ala 530	Leu	Arg	Lys	Met	Glu 535	Pro	Lys	Asp	Lys	Asp 540	Gln	Glu	Val	Leu
Leu 545	Gln	Thr	Phe	Leu	Asp 550	Asp	Ala	Ser	Pro	Gly 555	Asp	Lys	Arg	Leu	Ala 560
			Met	565					570					575	_
			Ile 580					585					590		
		595	His				600					605			
	610		Met			615					620				
625			Ser		630					635					640
_			Ile	645					650					655	
Leu	Lys	Thr	660 Thr	Leu	Thr	Ala	Phe	665 Gly	Phe	Ala	Ser	Ala	670 Asp	Leu	Ile
Glu	Ile	675 Gly	Leu	Glu	Gly	Lys	680 Gly	Phe	Glu	Pro	Thr	685 Leu	Glu	Ala	Leu
Phe	690 Gly	Lys	Gln	Gly	Phe	695 Phe	Pro	Asp	Ser	Val	700 Asn	Lys	Ala	Leu	Tyr
705 Trp	Val	Asn	Gly		710 Val	Pro	Asp	Gly		715 Ser	Lys	Val	Leu		720 Asp
				725					730					735	

His Phe Gly Tyr Thr Lys Asp Asp Lys His Glu Gln Asp Met Val Asn

740 745 750

Gly Ile Met Leu Ser Val Glu Lys Leu Ile Lys Asp Leu Lys Ser Lys 755 760 765

Glu Val Pro Glu Ala Arg Ala Tyr Leu Arg Ile Leu Gly Glu Glu Leu 770 775 780

Gly Phe Ala Ser Leu His Asp Leu Gln Leu Leu Gly Lys Leu Leu 785 790 795 800

Met Gly Ala Arg Thr Leu Gln Gly Ile Pro Gln Met Ile Gly Glu Val \$805\$ \$810 \$815

Ile Arg Lys Gly Ser Lys Asn Asp Phe Phe Leu His Tyr Ile Phe Met 820 825 830

Glu Asn Ala Phe Glu Leu Pro Thr Gly Ala Gly Leu Gln Leu Gln Ile 835 840 845

Ser